

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently amended) A circular cutter unit for cutting lengths of flat material comprising:

upper and lower circular blades lying in planes substantially perpendicular to a plane defined by the flat material and parallel with a longitudinal direction of the flat material;

E1 upper and lower blade shafts respectively supporting said upper and lower circular blades, said shafts extending parallel with said plane of the material and perpendicular to said longitudinal direction;

a non-positive drive connection between said circular blades including a transport ring mounted for rotation with the blade on one of the blade shafts and in driving relationship with the blade on the other of the blade shafts;

a frame having substantially a U-shape when viewed in a direction perpendicular to the plane of the flat material with upper and lower legs interconnected by a flat yoke intersecting said plane of the flat material at an acute angle,

means for rotatably supporting said upper and lower blade shafts respectively in said upper and lower legs; and

means for establishing and adjusting a cutting gap between said two circular blades. ~~blades; and~~

~~means for releasably coupling one of the circular blades of said cutter unit to a driving unit having a motor.~~

2. (Previously amended) A circular cutter unit according to claim 1 wherein said cutting gap is adjusted to between about 0.005 mm and about 0.030 mm.

3. (Cancelled)
4. (Cancelled)

3. (Previously amended) A circular cutter unit according to claim 1 wherein the transport ring of said non-positive drive connection between said blade shafts is in frictional driving engagement with the other of the blades.

6. (Cancelled)

4. (Currently amended) A circular cutter unit according to claim 1 ~~claim 6~~ wherein the means for establishing and adjusting a cutting gap between said two circular blades ~~means for rotatably supporting said upper blade shaft~~ includes an axially displaceable bush mounted in said upper leg of said frame.

5. (Currently amended) A circular cutter unit according to claim 1 wherein said cutting gap between said two circular blades is adjusted to a range of about 0.01 mm to about 0.020 mm. ~~0.01 to 0.020 mm.~~

9. (Cancelled)

6. (Currently amended) A circular cutter unit according to claim 1 wherein said upper and lower blade shafts support said circular blades in overlapping relationship at a cutting angle in a range of about 6° to about 8° ~~6 to 8°~~ at a nib of the overlapping circular blades.

7. (Currently amended) A circular cutter unit according to claim 1 ⁶ wherein each of said blade shafts has a diameter of less than about 25 mm.

8 12. (Currently amended). A circular cutter unit according to claim 11 wherein said acute angle at which said flat yoke intersects said ~~horizontal~~ plane of the flat material is in a range of about 8° to about 12°. ~~8 to 12°~~.

[13. (Cancelled).

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cont. 9 14. (Currently amended) A circular cutter unit according to claim 1 wherein said circular blades have cutting edges overlapping radially by a distance in a range of about 0.18 mm to about 0.23 mm. ~~0.18 to 0.23 mm~~.

10 15. (Currently amended) A circular cutter unit according to claim 14 wherein said upper and lower blade shafts support said circular blades at a cutting angle in a range of about 6.5° to about 7.5°. ~~6.5 to 7.5°~~.

11 16. (Currently amended) A circular cutter unit according to claim 15 wherein each of said blade shafts has a diameter of less than about 20 mm.

12 17. (Currently amended) A circular cutter unit according to claim 16 wherein said acute angle at which said flat yoke intersects said ~~horizontal~~ plane of the flat material is in a range of about 9° to about 11°. ~~9 to 11°~~.

13 18. (Currently amended) An apparatus for cutting flat lengths of sheet metal in a generally horizontal plane comprising:

a plurality of circular cutting units each including:

upper and lower circular blades lying in planes substantially perpendicular to the horizontal plane and parallel with a longitudinal direction in which the sheet metal is fed between the circular blades,

upper and lower blade shafts respectively supporting said upper and lower circular blades, said shafts extending parallel with said horizontal plane and perpendicular to said longitudinal direction,

a frictional drive connection between said blade shafts including a transport ring mounted respectively on each one of the upper and lower blade shafts adjacent the upper and lower circular blades respectively, and disposed in frictional driving relationship with the circular blade on the other of the upper and lower blade shafts;

a frame having substantially a U-shape when viewed from above the horizontal plane with upper and lower legs interconnected by a flat yoke intersecting said horizontal plane at an acute angle, and

means for rotatably supporting said upper and lower blade shafts respectively in said upper and lower legs, and means for establishing and adjusting a cutting gap between said two circular blades; and

~~means for releasably coupling each said cutter unit to a driving unit having a motor;~~

said apparatus further comprising a plurality of parallel guide rails extending perpendicular to said longitudinal direction in which the sheet metal is fed between the circular blades; and wherein

said frame of each of said circular cutter units is slideably mounted on said guide rails so that each of said circular cutter units is independently positionable along said guide rails.

~~means on each of said frames slideably engaging said guide rails so that each of said circular cutters is independently positionable along said rails.~~

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14 19. (Currently amended) An apparatus according to claim 13 wherein at least one of said circular cutting units has a cutting gap between said upper and lower circular blades in a range of about 0.0005 mm to about 0.030 mm. said means for establishing and adjusting said gap sets said gap to a width between 0.005 mm and 0.030 mm.

15 20. (Currently amended) An apparatus according to claim 13 wherein said circular cutting units are mounted on said guide rails with said circular blades of each circular cutting unit oriented in parallel relationship with the circular blades of the other circular cutting units.

21. (Cancelled)

16 22. (New) An apparatus according to claim 13 further comprising a drive unit including a motor for driving said lower blade shaft.
